

In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1-64. (Cancelled)

65. (Currently Amended) ~~An article~~ A bipolar device comprising:

a first electrode having a base and a first surface for positioning proximate to an opposing electrode having a base and a second surface that is reticulated, the first surface being reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface, wherein the protrusions have a length l and a cross-sectional thickness a , and wherein the cross-sectional thickness a varies along the length l of the protrusion such that the cross-sectional thickness, when averaged along the length of the protrusion, is less than about 100 microns, and wherein the first and second reticulating surfaces are interpenetrating.

66. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the protrusions are positioned periodically, aperiodically, or randomly on the first reticulating surface.

67. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the first surface has a surface area that is at least 2 times the theoretical area of a smooth, non-reticulated configuration.

68. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the first surface has a surface area that is at least 2.5 times the theoretical area of a smooth, non-reticulating configuration.

69. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the first surface has a surface area that is at least 3 times the theoretical area of a smooth, non-reticulating configuration.

70. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the first surface has a surface area that is at least 4 times the theoretical area of a smooth, non-reticulating configuration.

71. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the first surface has a surface area that is at least 5 times the theoretical area of a smooth, non-reticulating configuration.

72. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the cross-sectional width a of the protrusion increases at cross-sections approaching the base of the first electrode.

73. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein a cross-sectional area of the protrusion at a first position near to the base of the first electrode is greater than a cross-sectional area of the protrusion at a second position that is farther from the base.

74-76. (Cancelled)

77. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the opposing electrode ~~has a base and a second surface, is~~ reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface, wherein the protrusions have a length m and a cross-sectional thickness b .

78. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the opposing electrode ~~has a base and a second surface, is~~ reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface, wherein the protrusions have a length m and a cross-sectional thickness b and wherein the cross-sectional thickness b varies along the length m of the protrusion.

79. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the second surface has a surface area at least 2 times the theoretical surface area of a smooth non-reticulating surface.

80. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the second surface has a surface area at least 2.5 times the theoretical surface area of a smooth non-reticulating surface.

81. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the second surface has a surface area at least 3 times the theoretical surface area of a smooth non-reticulating surface.

82. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the second surface has a surface area at least 3.5 times the theoretical surface area of a smooth non-reticulating surface.

83. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the second surface has a surface area at least 4 times the theoretical surface area of a smooth non-reticulating surface.

84. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the second surface has a surface area at least 5 times the theoretical surface area of a smooth non-reticulating surface.

85. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the protrusions of the second reticulating surface are positioned periodically, aperiodically or randomly.

86. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the cross-sectional width b of the protrusion increases at cross-sections approaching the base of the opposing electrode.

87. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein a cross-sectional area of the protrusion at a first position near to the base of the first electrode is greater than a cross-sectional area of the protrusion at a second position that is farther from the base.

88. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the cross-sectional area of the protrusions of the second reticulating surface increases at cross-sections approaching the base of the opposing electrode.

89-90. (Cancelled)

91. (Currently amended) The ~~article~~ bipolar device of claim 78, wherein the second reticulating surface of the opposing electrode is complementary to the first reticulating surface of the first electrode.

92. (Currently amended) The ~~article~~ bipolar device of claim ~~90 or~~ 91, wherein the average distance between complementary reticulating surfaces is less than 100 microns.

93. (Currently amended) The ~~article~~ bipolar device of claim ~~90 or~~ 91, wherein the average distance between complementary reticulating surfaces is less than 50 microns.

94. (Currently amended) The ~~article~~ bipolar device of claim ~~90 or~~ 91 wherein the average distance between complementary reticulating surfaces is less than 25 microns.

95. (Currently amended) The ~~article~~ bipolar device of claim ~~90 or~~ 91, wherein the average distance between complementary reticulating surfaces is less than 10 microns.

96. (Currently amended) The ~~article~~ bipolar device of claim 78, further comprising an electrolyte positioned between the complementary first and second reticulating surfaces.
97. (Currently amended) The ~~article~~ bipolar device of claim 65, wherein the first electrode is porous.
98. (Currently amended) The ~~article~~ bipolar device of claim 97, wherein the opposing electrode is porous.
- 99-128. (Cancelled)
129. (Currently Amended) ~~An article comprising: The bipolar device of claim 65, a first electrode having a base and a first surface for positioning proximate to an opposing electrode, the first surface being reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface, wherein the protrusions have a length l and a cross-sectional thickness a and are positioned aperiodically on the first reticulating surface, and wherein the cross-sectional thickness a varies along the length l of the protrusion.~~
- 130-150. (Cancelled)
151. (Currently Amended) ~~An article comprising: The bipolar device of claim 65, a wherein the first, porous electrode is porous having a base and a first surface for positioning proximate to an opposing electrode, the first porous electrode having an average porosity of from about 10% to about 70%, the first surface being reticulated so as to define a plurality of protrusions and intervening indentations providing a surface area at least 1.5 times the theoretical surface area of a smooth non-reticulating surface, wherein the protrusions have a length l and a cross-sectional thickness a and wherein the cross-sectional thickness a varies along the length l of the protrusion.~~

152-160. (Cancelled)

161. (Currently amended) The ~~article~~ bipolar device of claim 151, wherein the first electrode has an average porosity of from about 20% to about 50%.

162. (Currently amended) The ~~article~~ bipolar device of claim 151, wherein the first electrode has an average porosity of from about 30% to about 45%.

163. (New) The bipolar device of claim 65, wherein l/a is greater than 2.

164. (New) The bipolar device of claim 65, wherein the thickness and the width of each protrusion are each a .